

CLAIMS:

1. (original) A polymeric material which comprises at least one peptidomimetic selected from the group consisting of:

$(\text{Gly}-\Psi[(E)\text{CH}=\text{C}]-\text{Xaa}-\text{Yaa})_n$ (1A)

$(\text{Gly}-\text{Xaa}-\Psi[(E)\text{CH}=\text{C}]-\text{Yaa})_n$ (1B)

$(\text{Gly}-\text{Xaa}-\text{Yaa}-\Psi[(E)\text{CH}=\text{CH}])_n$ (1C)

$(\text{Gly}-\Psi[(E)\text{CH}=\text{C}]-\text{Xaa}-\Psi[(E)\text{CH}=\text{C}]-\text{Yaa})_n$ (2A)

$(\text{Gly}-\text{Xaa}-\Psi[(E)\text{CH}=\text{C}]-\text{Yaa}-\Psi[(E)\text{CH}=\text{CH}])_n$ (2B)

$(\text{Gly}-\Psi[(E)\text{CH}=\text{C}]-\text{Xaa}-\text{Yaa}-\Psi[(E)\text{CH}=\text{CH}])_n$ (2C)

and

$(\text{Gly}-\Psi[(E)\text{CH}=\text{C}]-\text{Xaa}-\Psi[(E)\text{CH}=\text{C}]-\text{Yaa}-\Psi[(E)\text{CH}=\text{CH}])_n$ (3)

wherein Xaa and Yaa may be the same or different and represent a natural amino acid, Hyp or Flp;

n means an integer.

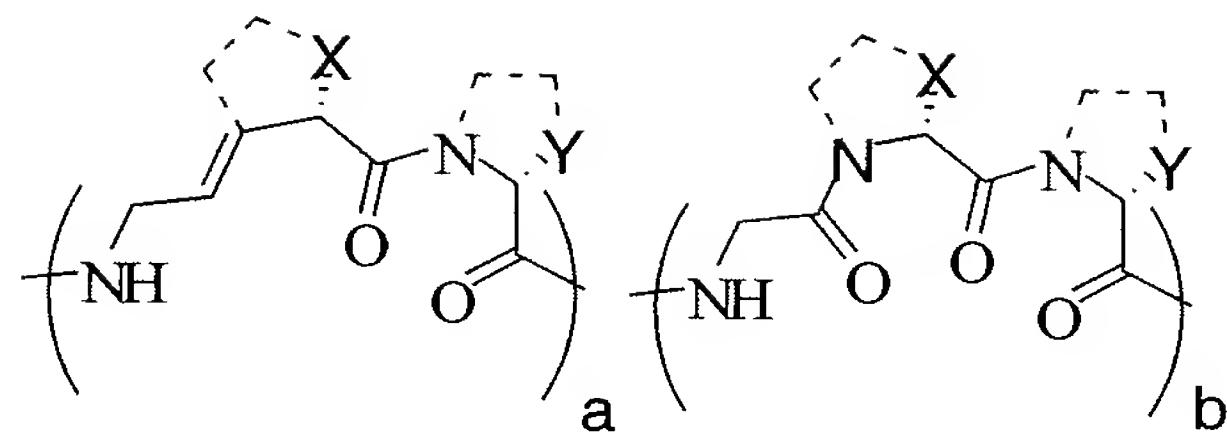
2. (original) The polymeric material of claim 1, wherein n is 10 or more.

3. (original) The polymeric material of claim 1, wherein the peptidomimetic comprises:

$(\text{Gly}-\Psi[(E)\text{CH}=\text{C}]-\text{Xaa}-\text{Yaa})_n$ (1A)

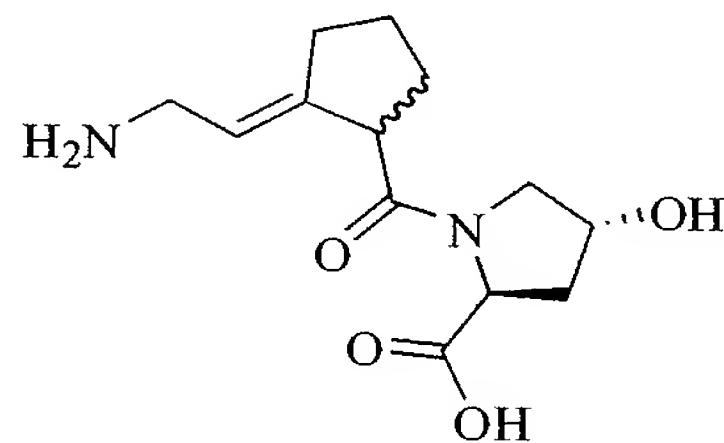
wherein Xaa is Pro and Yaa is Hyp.

4. (original) The polymeric material of claim 1, comprising a block polymer as follows:



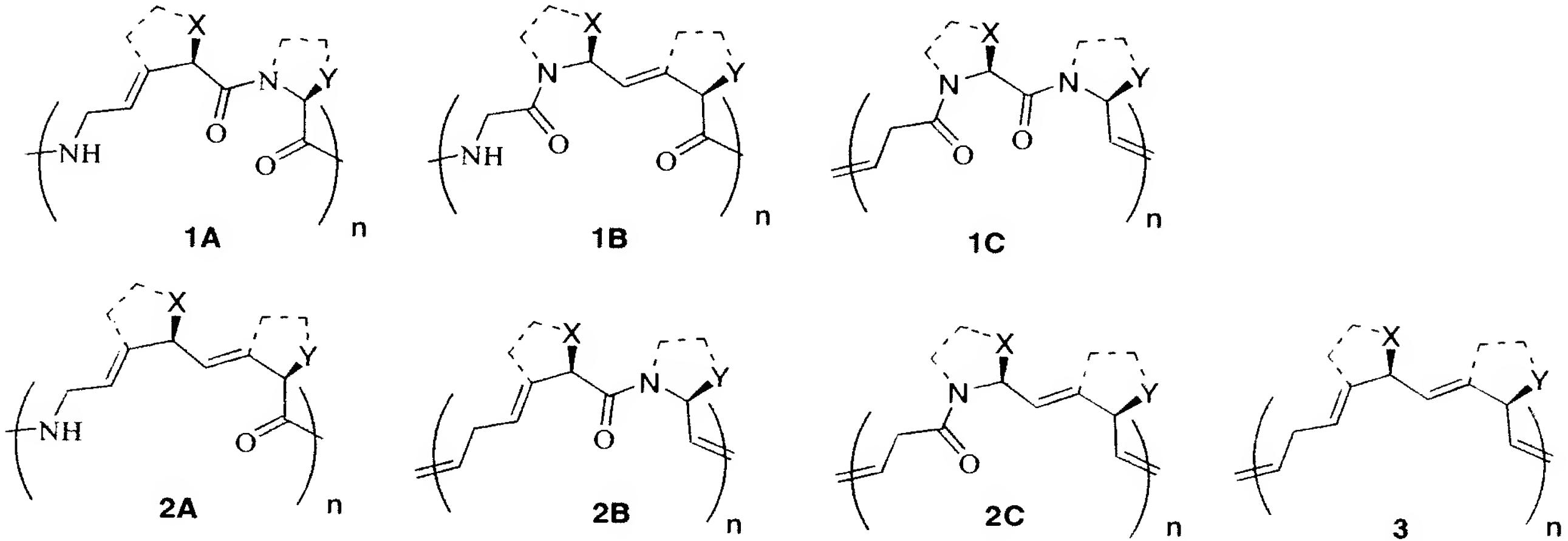
wherein a and b are integers between about 5 and 125, wherein a and b may be the same or different.

5. (original) The polymeric material of claim 1, comprising a block copolymer of a peptidomimetic with a natural peptide.
6. (original) The polymeric material of claim 1, comprising a monomer as follows:



7. (original) The polymeric material of claim 1, the polymeric material mimicking collagen.
8. (original) The polymeric material of claim 7, wherein the polymeric material is biocompatible and upon insertion into a region in a living patient where collagen at a previous time had been disposed, the inserted polymeric material provides at least one property of natural collagen.
9. (original) A product comprising a polymeric material which is not naturally occurring, comprises alkene bonding and has a triple helix rope-like structure.

10. (original) The product of claim 9, wherein the polymeric material comprises at least one selected from the group consisting of:



wherein n means an integer.

11. (original) The product of claim 10, wherein n is 10 or more.

12. (original) The product of claim 10, wherein the polymeric material has one or more selected from the group consisting of: greater stability than natural collagen, and greater collagenase-resistance than natural collagen; greater ability to fold than natural collagen.

13. (original) The product of claim 10, implanted or injected into a living organism.

14. (original) The product of claim 10, having biology purity suitable for use in a living human patient.

15. (original) The product of claim 10, not capable of producing a problematic immunologic reaction when injected into living human patients.

16. (currently amended) A method of tissue replacement in a living organism, comprising: delivering into the living organism the product of claim 1 or claim 10.
17. (currently amended) A method of hip replacement, comprising: disposing in a living organism the product of claim 1 or claim 10.
18. (currently amended) A biocompatible adhesive formed by the product of claim 1 or claim 10.
19. (currently amended) A method of biomineratization, comprising delivering into a living organism the product of claim 1 or claim 10.
20. (currently amended) A method of drug delivery, comprising: disposing in a living organism the product of claim 1 or claim 10 wherein the product comprises a drug.
21. (original) A method of synthesizing collagen-like peptides, comprising polymerization of a H-Gly- $\Psi[(E)CH=C]$ -Pro-Hyp-OH monomer.
22. (original) The synthesis method of claim 21, including polymerizing tripeptide units.
23. (original) The synthesis method of claim 21, wherein a (Gly-Pro-Hyp)_t polymer is synthesized wherein t is a number of repeating units of about 10 to 160.
24. (original) The synthesis method of claim 21, wherein a polymer comprising (Gly-Pro-Hyp) repeating units and having molecular weight of about 40,000 is synthesized.

-25. (original) The polymeric material of claim 1, wherein the peptidomimetic comprises:



wherein Xaa is Pro and Yaa is Pro.